

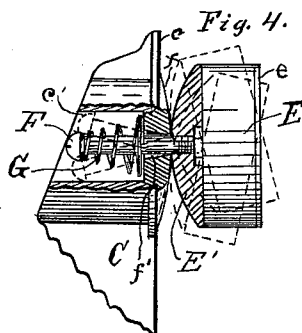
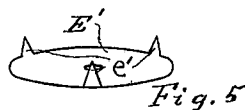
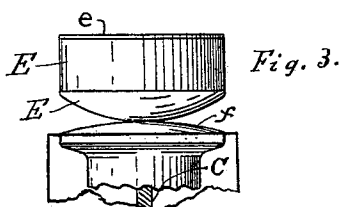
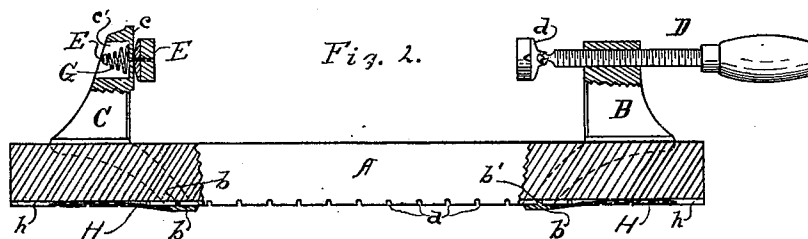
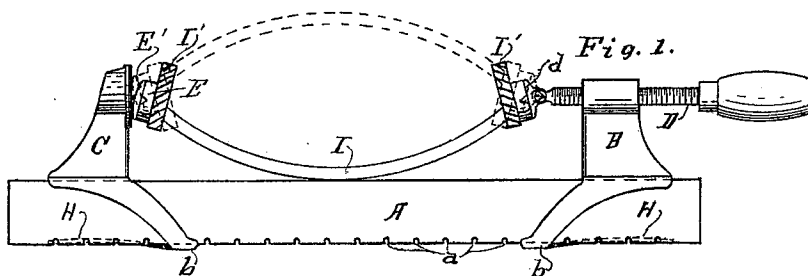
No. 615,071.

Patented Nov. 29, 1898.

**F. A. LEDWARD.
FURNITURE CLAMP.**

(Application filed Feb. 11, 1898.)

(No Model.)



Witnesses.

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UNITED STATES PATENT OFFICE.

FREDERICK A. LEDWARD, OF GRAND RAPIDS, MICHIGAN, ASSIGNOR OF
TWO-THIRDS TO S. WALLACE MCKEE AND MILLARD E. STOCKWELL,
OF SAME PLACE.

FURNITURE-CLAMP.

SPECIFICATION forming part of Letters Patent No. 615,071, dated November 29, 1898.

Application filed February 11, 1898. Serial No. 669,958. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK A. LEDWARD, a citizen of the United States, residing at Grand Rapids, in the county of Kent and State of Michigan, have invented certain new and useful Improvements in Furniture-Clamps, of which the following is a specification.

My invention relates to improvements in that class of clamps commonly known as "table-clamps;" and its objects are, first, to provide a clamp with which the bearing-blocks will both adjust themselves to the position of the surface to be acted upon, and, second, to so arrange the bearing for the block at the back end of the clamp that it will always be direct in whatever position the block may bear upon the object acted upon. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is an elevation of my clamp represented as acting upon posts connected by a concavo-convex rail with the posts upon an angle, so that both of the blocks are thrown to one side to insure a perfect bearing without the use of wedge-shaped blocking and showing the opposite position of the posts and rail in outline. Fig. 2 is an elevation of the clamp, partially in section, to show the relative position of the several parts. Fig. 3 is a top plan of the back jaw of the clamp and its block. Fig. 4 is a side view of the same, partially in section, to show the position and action of its several parts; and Fig. 5 is a perspective of the supporting-block plate at the back jaw of the clamp.

Similar letters refer to similar parts throughout the several views.

I construct the bar A with a series of notches *a* the whole length of the lower edge for the reception of the lug *b'* on the inner surface of the base *b* of the arm of the jaws B and C for the purpose of holding the jaws firmly to place when the clamp is in active use for pressing objects for forming glue-joints, &c. In the head-jaw I make use of the ordinary hand-screw D and its adjustable head *d*.

I form a chamber *c'* in the back jaw of the clamp for the reception of the spiral spring G, which is designed to act upon the bolt F to hold the head E to normal position and in-

sure its proper adjustment upon the object to be clamped. This bolt passes through an aperture *f'* in face of the jaw, which is made of conical form, so that the bolt may be carried over in any direction to give the desired adjustment to the head E, all as indicated by the dotted lines in Fig. 4.

The back of the plate E' is made convex, so that it may roll over the face of the jaw to the desired position, and I prefer that the face of the jaw be also made convex, as shown at *f* in Figs. 3 and 4, as by this means I am assured a more direct and positive bearing of the parts when the head is thrown to one side, as in Fig. 1, where I show the clamp in use upon a chair-back with a concavo-convex rail I, which throws the posts I' to an angle, so that the heads *d* and E are thrown from normal position. With the ordinary clamp it would be necessary to use blocks specially prepared for the purpose, while with my adjustable heads they will adjust themselves to any position without special preparation, as indicated by the dotted lines in Fig. 1.

Both of the heads are made adjustable, so that either of them may be placed at any desired position on the bar, by which means it is possible to use the clamp in places where but a short distance intervenes between the object clamped and some obstacle, as in case of an object standing near a wall or the floor. Another advantage attained by this means is that the head bearing the screw is more convenient of adjustment than the other, as it is the one by which the clamp is handled, and is adjusted without the necessity of turning the clamp around or removing it from the object being clamped. The heads are each provided with a spring H, which is common for holding adjustable heads to position on the bar.

I form the jaw C so that it projects a little distance above the block E, so that, if desired, an article may be clamped thereby above the head, which in many cases is necessary, as where the surface of bearing is not sufficient to cover the head E it may be clamped by the projecting portion *c*.

In Fig. 5 I show a perspective of the securing-block E', with spurs *e'* with which to secure it to the block E, though it may be

secured by screws or any other convenient device.

I find it desirable to face the heads with a pliable substance, as leather or kindred material, as *e*, so that it will not mar the article to be clamped.

In Fig. 1 I represent the edge of the supporting-bar of the clamp as bearing against the convex side of the rail *I*, which is for the purpose of supporting it, so that the pressure upon the posts will not bend the rail—a common difficulty with the ordinary clamp.

The springs *H* are bedded in a groove *h* for the purpose, first, of holding them steadily in position and, second, of carrying them below the surface of the bar, so that they will not be inconvenient and bothersome by reason of coming in contact with objects or of tearing and bruising the hands of the operator.

Having thus fully described my invention,

what I claim as new, and desire to secure by Letters Patent of the United States, is—

In a furniture-clamp, a supporting-bar, jaws longitudinally adjustable thereon, each independent of the other, adjusting-springs for holding said jaws to normal position, a screw and adjustable head in one of said jaws, and an adjustable head having a convex back surface a corresponding convex surface on the jaw to form a universal bearing for said head, a bolt secured to said head and passing through a conical aperture in the jaw, and a spring to hold said head to normal position, substantially as and for the purpose set forth.

Signed at Grand Rapids, Michigan, February 5, 1898.

FREDERICK A. LEDWARD.

In presence of—

ITHIEL J. CILLEY,
ANDREW ALLGIER.